Appendix E
Cultural Resources

ORD MOUNTAIN SOLAR AND ENERGY STORAGE PROJECT
ENVIRONMENTAL IMPACT REPORT

Cultural Resources Inventory and Evaluation Report for the Ord Mountain Solar Project and Calcite Substation Project, Lucerne Valley, San Bernardino County, California

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TABLE OF CONTENTS

Section **Page No.**

MANAGEMENT SUMMARY III

1 INTRODUCTION 1
1.1 Project Location and Description 1
1.2 Regulatory Context 1
1.2.2 State Regulations 1
1.3 Report Structure 10

2 REGIONAL CONTEXT 11
2.1 Natural Context 11
2.1.1 Modern Vegetation and Fauna 11
2.1.2 Contemporary Climate, Geology and Hydrology 11
2.1.3 Paleoenvironment 12
2.2 Cultural Context 12
2.2.1 Paleoindian (Pre-10,000 B.P.) 13
2.2.2 Lake Mojave and Silver Lake (10,000–7000 B.P.) 14
2.2.3 Pinto (7000-4000 B.P.) 15
2.2.4 Gypsum (4500–1500 B.P.) 16
2.2.5 Saratoga Springs (1500–800 B.P.) 17
2.2.6 Protohistoric (800-300 B.P) 17
2.2.7 Ethnohistory 18
2.2.8 Historic Period 21

3 METHODS 25
3.1 Native American Consultation 26

4 RESULTS 27
4.1 Record Search Results 27
4.1.1 Previous Archaeological Studies 27
4.1.2 Previously Recorded Sites 28
4.2 Field Results 30
4.2.1 Previously Recorded Sites 30
4.2.2 Previously Recorded Isolates 33
4.2.3 Newly Recorded Sites 33
4.2.4 Survey Conditions 36

TABLE OF CONTENTS (CONTINUED)

Page No.

5 CONCLUSIONS AND RECOMMENDATIONS....41

6 REFERENCES....43

NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION....53

FIGURES

1-1 Regional Map....3
1-2 Vicinity Map....5
2-1 Historic Mojave Desert Indian Territories....19
4-1 Cultural Resource Location Map....Included in Confidential Appendix B
4-2 Project Site Overview, facing west....37
4-3 Project Site Overview, Facing West....39

TABLES

4-1 Previous Archaeological Studies Identified in the Records Searches....27
4-2 Previously Identified Archaeological Sites in the APE and the 1-Mile Record Search Area....28

APPENDICES

A Records Search Information and Site Forms (Confidential)
B Location Maps and Updated Site Records (Confidential)
C Tribal Correspondence Documentation
D ICF Cultural Resources Inventory for the Calcite Substation Project (Confidential)

MANAGEMENT SUMMARY

This report documents the cultural resources inventory and evaluation performed by Dudek for the Ord Mountain Solar Project. NextEra Energy Resources proposes to develop a 60 megawatt (MW) solar electric generation facility on 484 acres of fallow agricultural land. The project is located on unincorporated private land in Lucerne Valley in San Bernardino County, California. The project is located in Township 6N, Range 1W, Section 36 and Township 5N Range 1W, Section 1 of the White Horse Mountain, California USGS 7.5 Minute Series Quadrangle.

This study addresses the area of potential effects (APE) for this solar energy facility, which consists of the 484 acre project area. The project also includes a 220-kilovolt (kV) overhead generation tie line (gen-tie line), which would extend approximately 0.6 mile southwest to Southern California Edison's (SCE) proposed Calcite Substation. A separate study was prepared for the Substation and gen-tie by ICF (ICF 2016) and is summarized within this report.

The County of San Bernardino is the lead agency for compliance with the California Environmental Quality Act (CEQA). The County is responsible for government-to-government consultation with Native American Tribes under Assembly Bill 52.

Dudek request a search of the Sacred Lands File at the Native American Heritage Commission in July 2016; this search did not identify any resources within 1-mile of the project site. Letters were also sent by Dudek to Native American tribal contacts in the area requesting information on tribal resources in the area. To date, no responses have been received.

The APE was previously surveyed in 2009 and 2011 by SWCA, at which time three archaeological sites and six isolates were identified. All nine resources were evaluated and recommended as not significant under CEQA and not eligible for listing in the California Register of Historical Resources (CRHR). Dudek performed a Class III intensive pedestrian survey of the APE in July 2016. The three previously recorded archaeological sites and two newly recorded archaeological sites were identified in the APE. All five sites are related to historic ranching/agriculture, including a residential house which all the other sites are likely related to. All five resources were evaluated and recommended as not significant under CEQA and not eligible for listing in the CRHR . The six previously recorded isolates were not relocated by Dudek. These six isolates are also recommended as not significant under both CEQA and are not eligible for listing on CHRH. Under CEQA, no historical resources or unique resources are present in the APE.

ICF's cultural resource inventory for the Calcite Substation included the gen-tie line which will be built in association with this project (ICF 2016). That project identified one cultural resource with the 400 ft. wide gen-tie corridor. The resource, P-36-028005, is Barstow Road / State

Route-247 and was previously recommended eligible for listing in the National Register of Historic Places (NRHP) and the CRHR. The gen-tie line will cross over the highway and the road itself will not be directly impacted by construction of the gen-tie. Due to the placement of the gen-tie adjacent to three existing transmission lines in a utility corridor, the gen-tie poles will blend into the existing visual landscape, and therefore the project will not have a visual impact on motorists driving on SR-247. Therefore, the project would have no impact to historical resources. No further cultural resource work is recommended for this project.

In the event that previously unknown archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted, in consultation with the County. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the remains are determined to be Native American, the Coroner shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the Most Likely Descendent (MLD) from the deceased Native American. The MLD shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

1 INTRODUCTION

1.1 Project Location and Description

The proposed Ord Mountain Solar Project is located on unincorporated private land in Lucerne Valley in San Bernardino County, California (Figure 1-1). The project is situated on approximately 484 acres comprising eight parcels (Accessor Parcel Numbers 045304107, 045309111, 045309112, 045309124, 045309129, 045309131, 045309148, 045309151, and 045309172). The project is located in Township 6N, Range 1W, Section 36 and Township 5N Range 1W, Section 1 of the White Horse Mountain, California USGS 7.5 Minute Series Quadrangle (Figure 1-2).

The project site is located east of State Route 247; north of Haynes Road; and west of Meridian Road, approximately eight miles north of Lucerne Valley, in unincorporated San Bernardino County (County). The project would be a 60 Megawatt (MW) alternating current (AC) photovoltaic (PV) solar energy facility with associated on-site substation, inverters, fencing, roads, and supervisory control and data acquisition (SCADA) system. This study addresses the area of potential effects (APE) for this solar energy facility, which consists of the 484 acre project area. The project also includes a 220-kilovolt (kV) overhead generation tie line (gen-tie line), which would extend approximately 0.6 mile southwest to Southern California Edison's (SCE) proposed Calcite Substation. The gen-tie line would consist of approximately seven single-circuit, up to 150 ft. tall concrete or steel poles, spaced an average of 500 ft. apart. The gen-tie is located on APN 045204107, immediately adjacent to the APE. The gen-tie corridor (including a 200 ft. buffer around the gen-tie) was addressed in a separate cultural resource study (ICF 2016). A summary of the findings related to the gen-tie is included herein, and the report is included as Confidential Appendix D.

1.2 Regulatory Context

The project APE is located on unincorporated private lands within San Bernardino County, thus requiring compliance with the California Environmental Quality Act (CEQA). Therefore, this study was prepared in accordance with State regulations. The County of San Bernardino (County) is the lead agency for ensuring compliance with CEQA.

1.2.2 State Regulations

California Register of Historical Resources (CRHR)

In California, the term "historical resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically

significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California." (PRC section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." (PRC section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than fifty years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see Cal. Code Regs., tit. 14, section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

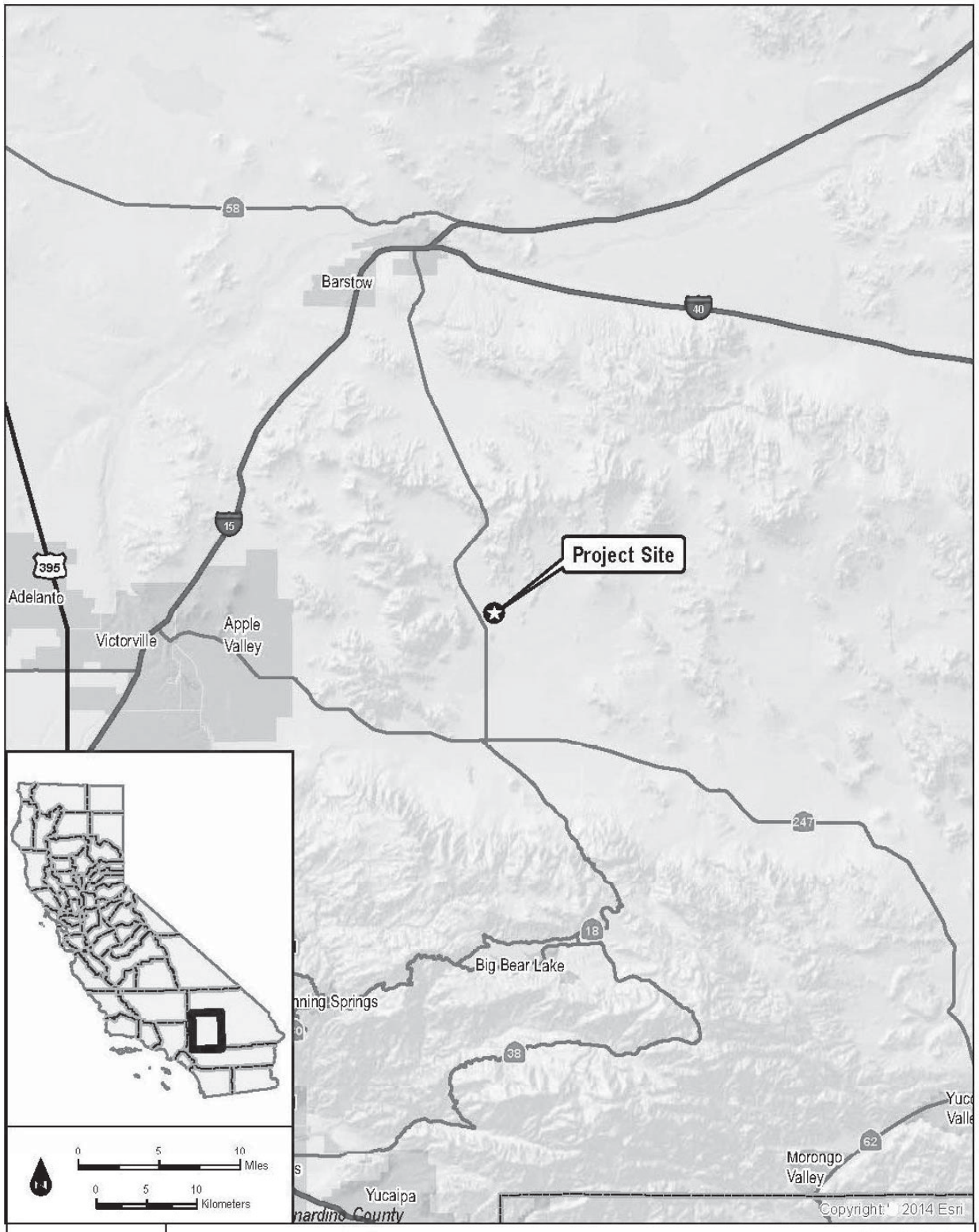

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FIGURE 1-1
Regional Map

Ord Mountain Solar Energy Project

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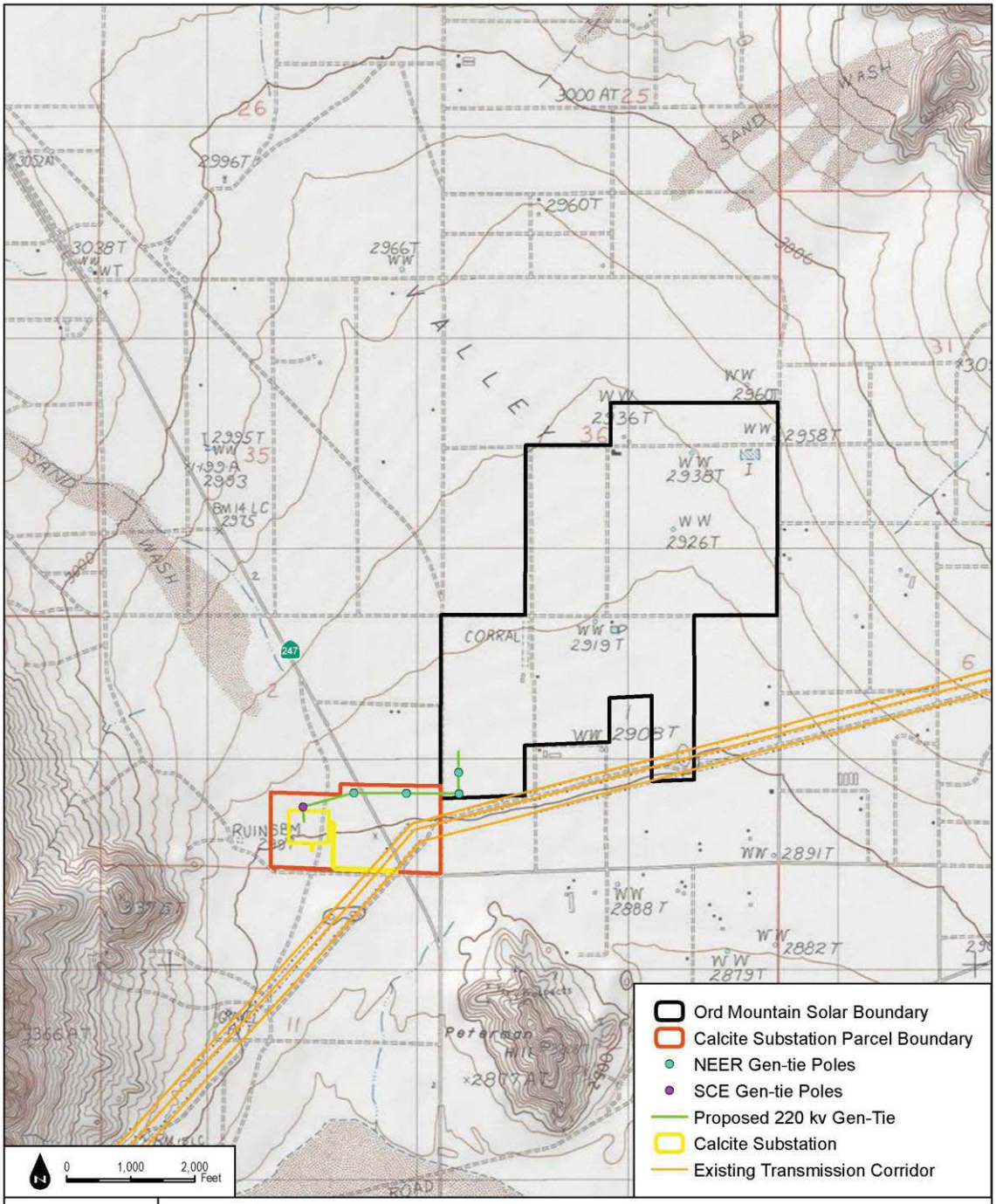
Ord Mountain Solar Boundary
Calcite Substation Parcel Boundary
NEER Gen-tie Poles
SCE Gen-tie Poles
Proposed 220 kv Gen-Tie
Calcite Substation
Existing Transmission Corridor
0
1,000
2,000
Feet
SOURCE: USGS 7.5-Minute Series White Horse Mountain Quadrangle
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FIGURE 2
Vicinity Map
Ord Mountain Solar Energy Storage Project and Calcite Substation Project

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California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

PRC section 21083.2(g) defines "unique archaeological resource."

PRC section 21084.1 and CEQA Guidelines section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource;" it also defines the circumstances when a project would materially impair the significance of an historical resource.

PRC section 21074(a) defines "tribal cultural resources."

- PRC section 5097.98 and CEQA Guidelines section 15064.5(e): Set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.

PRC sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC section 21084.1; CEQA Guidelines section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC section 21084.1; CEQA Guidelines section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC section 21084.1; CEQA Guidelines section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines section 15064.5(b)(1);

PR Code section 5020.1(q)). In turn, the significance of an historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA(CEQA Guidelines section 15064.5(b)(2)).

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2[a], [b], and [c]).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC section 21083.2(a); CEQA Guidelines section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC section 5097.98.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California Native American Heritage Commission (NAHC) within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Assembly Bill (AB) 52

California Assembly Bill (AB52), which took effect July 1, 2015, establishes a consultation process between California Native American Tribes and lead agencies in order to address tribal concerns regarding project impacts and mitigation to "tribal cultural resources" (TCR). Public Resources Code section 21074(a) defines TCRs and states that a project that has the potential to cause a substantial adverse change to a TCR, is a project that may have an adverse effect on the environment. A TCR is defined as a site, feature, place, cultural landscape, sacred place, and object with cultural value to a California Native American tribe that is either:

1. listed or eligible for listing in the CRHR or a local register of historical resources, or
2. determined by a lead agency to be a TCR

1.3 Report Structure

After this introduction, Section 2 of this report presents a review of the natural and cultural background of Lucerne Valley and the Mojave Desert region in general. Section 3 presents the methods used to conduct this study. Section 4 presents the results of the records search and field survey. Section 5 summarizes the study, discusses effects, and provides recommendations for treatment of cultural resources. Several appendices include confidential information: Appendix A includes records search information and Appendix B includes location maps and site forms.

2 REGIONAL CONTEXT

In this chapter, the natural and cultural context of the central Mojave Desert is reviewed to provide a foundation for inference about resources located near to the current project area. The physical context of the region is reviewed first, followed by trends of human occupation from prehistoric to historic times.

2.1 Natural Context

2.1.1 Modern Vegetation and Fauna

Plant and animal communities across the Mojave Desert vary mostly according to topography, elevation, and soil type. The dominant vegetation scheme is Mojave Desert scrub, which includes habitats of saltbush scrub (halophytic and arid phases), creosote bush scrub, Joshua tree woodland, and "wash wetland" or mesquite bosque (Sawyer 1994; Vasek and Barbour 1977). Playa margins are dominated by saltbush scrub but contain patches of creosote scrub as well; although mesquite bosques are also found among the dunes that mark old shorelines. Well-drained, sandy areas situated at slightly higher elevations within playa basins are dominated by creosote scrub, which characterizes much of the alluvial plain in Lucerne Valley. Joshua tree woodland consists of Joshua tree (*Yucca brevifolia*) and various herbs and shrubs, occurring at elevations above creosote scrub. Mesquite bosques occur in washes and dune areas. Sagebrush and inkwood are common associates within the mesquite community.

A wide array of fauna inhabits the Mojave Desert. Large mammals such as bighorn sheep (*Ovis canadensis nelsoni*) and pronghorn (*Antilocapra americana*) are uncommon, but do inhabit mountainous and valley areas, respectively. Medium-sized mammals such as coyote (*Canis latrans*) and fox (*Urocyon cinereoargentens*) are common to scrub environments. Smaller animals include blacktailed jackrabbit (*Lepus californicus*), cottontail rabbit (*Sylvilagus audubonii*), ground squirrel (*Spermophilus* sp.), and kangaroo rat (*Dipodomys* sp.). Reptiles, like the desert tortoise (*Gopherus agassizi*) and horned lizard (*Phrynosoma platyrhinos*), inhabit Joshua tree woodland and scrub environments, and there are many birds and migratory waterfowl present at lower elevations (Cornett 1987).

2.1.2 Contemporary Climate, Geology and Hydrology

The climate of the Lucerne Valley region is typical of the central Mojave, and of mid-latitude deserts overall with cool, moist winters and hot, dry summers. Temperatures in the winter can dip below freezing, often hovering just above 0° Celsius (32° Fahrenheit) during winter nights, while summer temperatures are high, averaging 38–45° Celsius (from 100° to over 110° Fahrenheit). Prevailing

winds are typically westerly at 10–15 knots, with gusts nearing 50 knots a common occurrence. Rainfall occurs primarily during the winter season, totaling less than 4–6 inches annually.

The valley itself is characterized primarily by Quaternary alluvium deposits (Dibblee Jr. 1964). These alluvial deposits are derived from the mountains surrounding the valley, which are composed primarily of Mesozoic granitic rock (hornblende diorite gabbro granite and quartz monzonite) and Pre-Cambrian metamorphic (quartz diorite gneiss and granite gneiss) rock (Dibblee Jr. 1964). Erosion and deflation are the primary factors that have influenced the geomorphological context of Lucerne Valley. Deeply incised washes drain the Granite Mountains from the west and the Ord Mountains from the north into the dry lake bed of Lucerne Lake in the center of the valley to the south of the project area.

2.1.3 Paleoenvironment

During the late Pleistocene, vegetation across the region was sustained by a milder (cool-wet) climate. Most of the Mojave Desert was forested by piñon-juniper woodland, at elevations of 3,000–4,000 feet lower than those found at present. Attendant large game in the region consisted of Pleistocene horses, camels, and mammoths. As Wisconsin glacial conditions waned between 12,000–10,000 B.P., basin lakes began to desiccate and woodland vegetation began shifting to higher elevations. Over the next few thousand years, the basic climatic conditions, floral communities, and faunal composition of the contemporary central Mojave gradually took form. Much of the desert assumed essentially modern conditions by the middle Holocene (about 7500 B.P.), as woodland habitat was replaced by mixed saltbush (*Atriplex* spp.) and creosote (*Larrea tridentata*) vegetation during a gradual warming and drying period known as the Altithermal (Antevs 1955). The next major climatic shift is the Medieval Climatic Anomaly (MCA). The MCA is defined as sequential droughts varying in intensity that occurred between about 1200–650 B.P. (Gardner 2007; Jones et al. 1999). The effects of the MCA on desert environments are questionable, given that most plant and animal communities in the desert regions were already drought-tolerant. Nevertheless, a major impact of punctuated droughts would be the reduction of available water—one resource critical for human occupation. Finally, the last 650 years of prehistory are defined by a high degree of variation in precipitation and seasonal temperatures. That these fluctuations produced on-the-ground changes in biotic communities is a subject of debate, despite their recent occurrence.

2.2 Cultural Context

While it is likely that long-term trends in prehistoric subsistence/settlement adaptations, and the timing of major changes in them, were largely similar across the Mojave Desert region, the many attempts to summarize them during the last 30 years of archaeological research have

often produced differing results. In particular, the character of late Pleistocene/early Holocene adaptations is still unclear and strongly debated, due in part to the persistence of long-standing notions of "Paleoindian" lifeways, but due also to the continued scarcity of archaeological data from ancient sites in good, dateable contexts. The following summary of early prehistoric culture history, therefore, contains some assertions that are largely inferred and many that are highly debatable. Other important, more detailed syntheses can be found elsewhere (Basgall 1993, 2000; Giambastiani and Basgall 2000; Grayson 1993; Warren 1984; Warren and Crabtree 1986), and the interested reader is referred to those sources to become more familiar with the number of different and often better substantiated opinions about the nature of ancient human adaptations in the Mojave Desert. For this study, the following discussion uses generally accepted culture-historical terminology.

2.2.1 Paleoindian (Pre-10,000 B.P.)

Though much has been written about the Paleoindian period in western North America, it remains poorly understood, especially in the Mojave Desert where organic materials associated with Paleoindian toolkits and suitable for radiocarbon assays are virtually nonexistent. The problem is made worse by the vagaries of obsidian hydration from specimens that date to this period (due largely to weathered or sandblasted specimens) (see Basgall and Overly 2004). The hallmark artifacts of the Paleoindian period—fluted concave base projectile points—are not an uncommon occurrence throughout the Mojave, particularly on the China Lake Naval Air Weapons Station (NAWS), where Emma Lou Davis documented a robust Paleoindian component (Davis 1975; Davis and Panlaqui 1978). Malcolm Rogers (1929) documented a similar component at Pleistocene Lake Mojave. Since then, discoveries of fluted concave base points have become more common, especially on military installations where most systematic archaeological work has occurred (see Basgall 2007; Basgall and Hall 1991, 1993, and 1994).

Fluted concave base points remain the hallmark of Paleoindian occupation because they are technologically distinctive and their morphological correlates are well dated to the 12,000–10,000 B.P. (late Pleistocene) in the Great Plains (Meltzer 1993; Tuohy 1974; Willig and Aikens 1988). To be sure, the best case for late Pleistocene occupation of the Mojave Desert comes from the China Lake assemblages where Emma Lou Davis reported fluted concave base points in strong association with burned bone from extinct late Pleistocene fauna (Davis and Panlaqui 1978; see also Basgall 2007). When found with other tools, fluted points tend to be associated with a highly formalized lithic tool kit consisting of shaped scraping and cutting tools, and crescents, with groundstone being essentially absent.

Most early discoveries of fluted points have occurred along the margins of Pleistocene dry lake beds, leading to an obvious assumption that Paleoindian groups were adapted to lacustrine

environments for targeting large game, and the definition of the Western Pluvial Lakes Tradition (Bedwell 1970). However, research in the last 40 years since has demonstrated that fluted point sites occur in a variety of environments, indicating that inhabitants were likely generalized foragers rather than specialized big game hunters. However, much debate surrounds this interpretation because of the specialized nature of fluted point technology (Bettinger 1999; Dincauze and Curran 1983; Kelly and Todd 1988; Meltzer 1993; Simms 1988). Regardless, there is little, if any, debate that Paleoindian groups were highly mobile. This is inferred from the wide range of lithic raw materials reflected in fluted point assemblages indicating that the points traveled far from the stone sources (Basgall 1988; Goodyear 1979; Giambastiani 2008).

Basgall's (2007) work on China Lake, investigating areas targeted by Emma Lou Davis such as Basalt Ridge and the Lakebed Locality, has teased apart some patterning, finding some success in obsidian hydration dating of related artifacts as early as 12,000 years ago. Additionally, spatial patterning in artifact types recognized by Basgall (2007) provides additional reason to separate Great Basin Stemmed points as a later variant than fluted concave base points.

2.2.2 Lake Mojave and Silver Lake (10,000–7000 B.P.)

In the western Great Basin, various stemmed projectile point forms have been fairly well dated to the early Holocene, roughly between 10,000–7500 B.P. The "Great Basin Stemmed" label is used to describe a relatively wide range of stemmed points characterized by relatively long lanceolate blades with obtuse stem-to-shoulder angles that are often rounded (Justice 2002). In the Mojave Desert, Great Basin Stemmed varieties are represented by relatively slender Lake Mojave (unshouldered) and Silver Lake (slightly shouldered) forms. Associated toolkits are similar to those found with fluted points, and include various shaped scraping and cutting tools, bifaces, and crescents. The formal shape of these items is both a product of initial shaping as well as rejuvenation over time. Also like fluted points, Lake Mojave and Silver Lake points were at first thought to be associated with extant Pleistocene lakes due to their discovery in such contexts; however, recent research has shown that they occur in a wide range of contexts outside of lacustrine settings. Lake Mojave and Silver Lake are generally thought to reflect the same socioeconomic pattern as San Dieguito (Rogers 1939; Warren 1967) and Death Valley I (Hunt 1975). This similarity is borne out by the discovery of Lake Mojave and Silver Lake point forms located in archaeological sites in the San Diego region (Hale 2011; see also Warren 1967). More interesting is that there are indications at some Lake Mojave and Silver Lake sites that grinding implements increase in frequency and signify the growing importance of vegetal processing; though such an inference is not well substantiated. Regardless, Basgall (1993) suggests that preservation bias (including preservation of grinding tools in erosional contexts) likely contributes to a misunderstanding of the role of plant foods in Early Holocene contexts.

The contribution of different foods to the diet of people inhabiting the Mojave Desert during Lake Mojave and Silver Lake periods is largely inferred from subsistence technology. A consensus is developing that suggests the variability in the form and use of subsistence technology of these periods is indicative of a generalized diet with regionally variant manifestations. Despite such regional variability, faunal profiles from Lake Mojave and Silver Lake sites appear stable (Basgall 1991, 1993; Douglas et al. 1988; Hall 1991; Jenkins 1985; Warren et al. 1986). Small game seems to predominate in these assemblages, though medium and large-bodied prey are not rare (Basgall and Hall 1992; Douglas et al. 1988).

2.2.3 Pinto (7000-4000 B.P.)

Archaeological assemblages dating to this period are typified by Pinto points, projectiles bearing weak shoulders and indented or split-stem bases (Basgall and Hall 2000). Associated flaked stone assemblages include leaf-shaped bifaces, formal unifaces, simple flake tools, and large quantities of groundstone and core-cobble implements (Basgall 1993, 2000; Campbell and Campbell 1935; Hale 2001; Hunt 1960; Rogers 1939). The stark abundance of groundstone in Pinto assemblages signals a fundamental shift in subsistence and settlement, leading most researchers to speculate that seed processing was an socioeconomic response to the Altithermal—a period of marked aridity for the desert west (Antevs (1953). Early research continued to be site-specific in approach, producing a biased record that, on the surface, indicates the Mojave Desert was all but abandoned during the Altithermal of the Middle Holocene (Rogers 1939; Wallace 1962). However, ongoing research has documented an abundance of Pinto period sites in the Mojave—large and small—indicating instead very regular, serial occupation of sites with access to predictable resources (Basgall and Hall 1993). Moreover, additional research indicates that the Altithermal was variable in its onset, magnitude, and consistency, likely being regionally variable in the degree of aridity (Grayson 1993; Mehringer 1986).

Regardless, the pattern of serial site occupation during Pinto times generated vast, relatively homogenous assemblages. In areas of raw material abundance, Pinto toolkits appear more expedient in nature, taking advantage of easily exploitable local materials for use as grinding stones and for lithic tool production, while smaller or more task specific sites have higher proportions of shaped tools, including shaped grinding stones (Basgall and Hall 1993; Hale 2001). Indeed, the high visibility of large Pinto habitation sites would appear at first glance to signify larger, more stable populations. However, serial site occupation is a more likely scenario for the robustness of these assemblages, and population densities during Pinto times probably remained similar to those during the Silver Lake period, if not slightly denser.

The large numbers of grinding stones has been taken to signify a widening of diet breadth to exploit lower ranked seeds with higher processing costs (Grayson 1993; Warren 1980, 1984;

Warren and Crabtree 1986). Small animals continue to dominate Pinto period faunal profiles, as they did during the Silver Lake period, lending support to such a scenario. Additionally, Pinto period midden deposits seem more abundant or least recognizable than during the Lake Mojave/Silver Lake period (see Basgall et al. 2002). However, the trend of increasing diet breadth probably began during the Lake Mojave/Silver Lake period, as indicated by morphological characteristics of subsistence tools and the presence of groundstone implements therein.

2.2.4 Gypsum (4500–1500 B.P.)

Diagnostic artifacts at Gypsum period sites include Gypsum contracting-stem projectile points, Elko Eared and Corner-notched points, and Humboldt Basal-notched points. Lithic assemblages are typified by bifaces, formal scrapers, a large number and variety of other flake-based tools, and millingstones and handstones, but also contain mortars and pestles as evidence of expanded plant processing (including mesquite, pine nuts, yucca, and agave) (Hale et al. 2012). Sutton (1988, 1996) speculates that the presence of some large villages or village complexes that appear during Gypsum times reflect a transition from seasonal transhumance to year-round sedentary occupation, although this pattern may have been limited to the southwestern Mojave Desert, particularly within the Antelope Valley. Regardless, the Gypsum period appears to be defined by subsistence intensification and the development of large scale regional trade relations. Warren et al. (1986) suggest that the terminus of the Altithermal between 5,000–4,000 years B.P. produced widespread improvement in environmental conditions, including the availability of water and stable resource communities. Further support of environmental improvements is provided by Gardner (2007) who analyzed data from a slew of sites in the western Mojave to assess the socioeconomic impact of the Medieval Climatic Anomaly and in so doing, suggested a revision in the terminus of the Gypsum period to about 2000 B.P. Gardner (2007: 241) based this revision on the early appearance of the bow and arrow within the Rose Spring Complex in conjunction with an increase in effective moisture at 2000 B.P. In any case, the effect of these environmental changes on human subsistence is inferred from an apparent increase in large game hunting and the intensive exploitation of high value seed and nut crops, mainly pinyon, mesquite, and acorn (Warren 1984; Warren et al. 1986).

Marked intensification beginning during Gypsum times is supported by an sharp increase in the frequency of milling tools at Gypsum period sites on Fort Irwin (Basgall 1993); a pattern paralleled at Twentynine Palms Marine Corps Air Ground Combat Center (MCAGCC) (Basgall and Giambastiani 2000), as well as on Edwards Air Force Base (Bupp et al. 1998; Giambastiani and Basgall 1999; Byrd et al. 1994).

Subsistence intensification and consequent shifts in settlement were accompanied by enhanced cultural relationships between various Mojave Desert groups. Given the high mobility of Mojave

Desert groups for much of the Holocene, trans-desert trade relationships have likely been in place and somewhat complex for a long period of time. These trade relationships are evidenced by Lake Mojave and Silver Lake points (likely occupations) at coastal sites in San Diego County (see Hale 2011; Warren 1967), as well as marine shell items in Mojave Desert sites that date to the Early Holocene. Additional evidence of early trans-desert relationships also come from Newberry Cave, where split-twig figurines were identified that appear similar to those in the Grand Canyon (Davis and Smith 1981; Jennings 1978; Schwartz et al. 1958). Hale et al. (2009), Hunt (1960), Leonard and Drover (1980), Lyneis (1982), and a host of others report Anasazi ceramics in Mojave Desert sites. Halloran Springs provided evidence not only of Anasazi ceramics, but also of turquoise quarrying that was used by prehistoric and ethnohistoric aboriginal groups for trade (Drover 1980a, 1980b; Rogers 1929).

2.2.5 Saratoga Springs (1500–800 B.P.)

By at least 1500 B.P. (or 2000 B.P. using Gardner's [2007] chronological scheme), the aboriginal people of the Mojave Desert had replaced the atl atl (or spear-thrower) with the bow and arrow (Yohe 1992, 1998). This change brought about a shift toward the use of smaller projectile points, including various corner-notched and side-notched Saratoga Springs types and the corner-notched Rose Spring and Eastgate types. Anasazi ceramics are more common in the southern Mojave around 1200–1100 B.P., coinciding with the westward spread of the Virgin Anasazi into southern Nevada. Influence from the cultures of the Colorado River eventually grew stronger than those from the west, allowing for an influx of buffware ceramics and other goods that persisted until the historic present. The intensification of plant use initiated during the Gypsum period continued in the Saratoga Springs period, as diet breadth was expanded to include a wide range of plant foods that required high cost/high return procurement and processing strategies. This is indicated by a general increase in milling equipment from Gypsum times through the Saratoga Springs period (see Gardner 2007: 225-228). Warren et al. (1986) speculate that an increase in plant use might have continued until about 700 B.P., when artiodactyl overexploitation necessitated the further expansion of native diets and vegetal resources first assumed a dominant economic role (Warren et al. 1986). However, the appearance of mortars and pestles—by all accounts, a costly processing technology—during earlier Gypsum times suggests that plant processing was already taking a dietary lead.

2.2.6 Protohistoric (800-300 B.P)

Social and economic adaptations during this final prehistoric interval were largely an extension of patterns that developed during the Saratoga Springs period. Trade along the Mojave River continued to provide the people of eastern Antelope Valley with a variety of exotic goods and materials, although it appears that relationships with groups in coastal California eventually grew

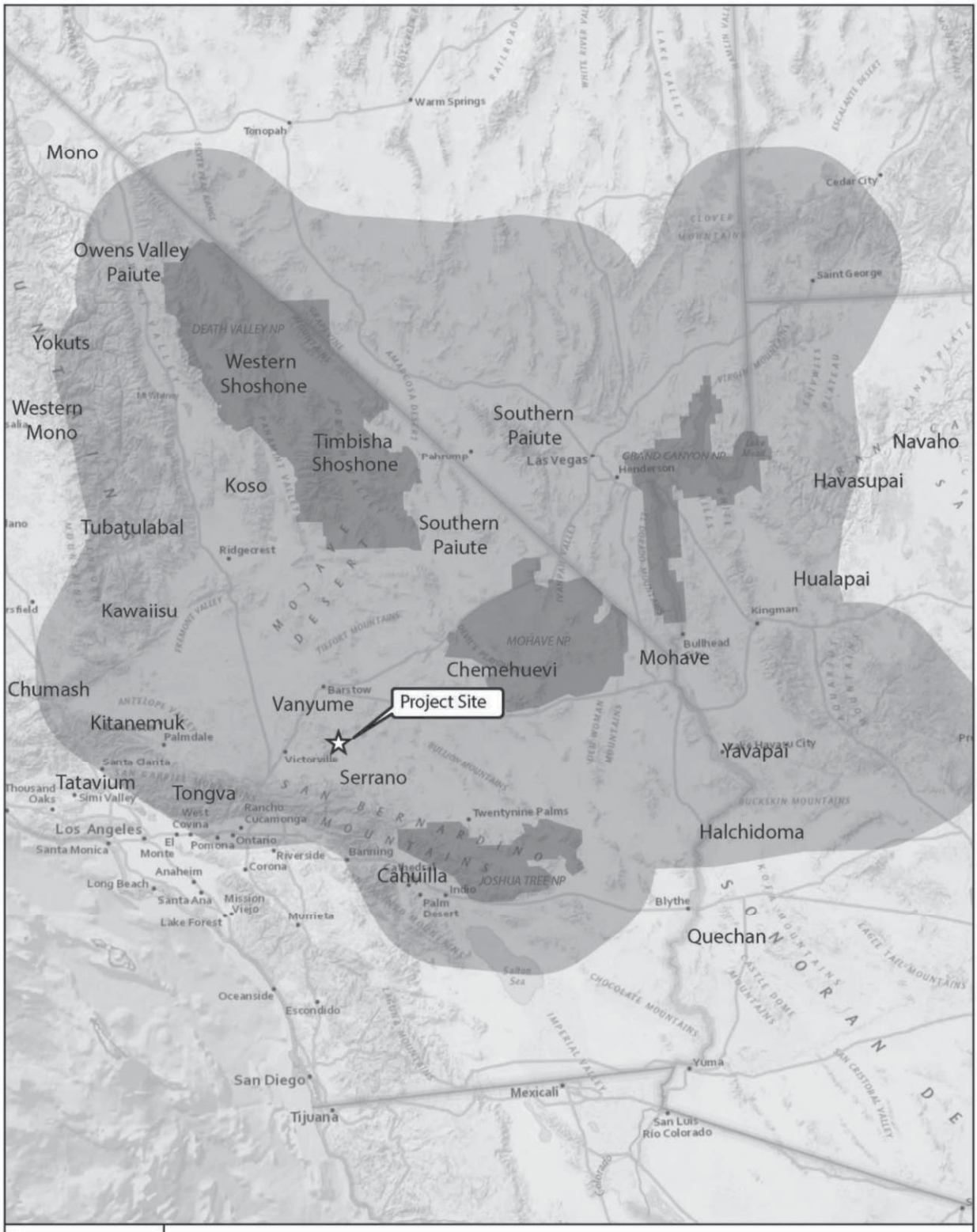
stronger than those with groups inhabiting the arid interior, suggested by acorns and shell beads becoming more common. Projectile points also shifted in form, with unnotched Cottonwood Triangular and Desert Side-notched points being even smaller than their predecessors. Mortars and pestles also appear in significant quantities, probably an indication of increased emphasis on high-cost/high-yield processing.

2.2.7 Ethnohistory

Aboriginal groups that inhabited the Mojave Desert at the time of contact with Euroamerican explorers and settlers were numerous, including Numic-speakers (Southern Paiute/Chemehuevi, Kawaiisu, and Panamint Shoshone), and Takic speakers (Serrano/Vanyume) (Earle 2005; Kroeber 1925; Laird 1976; Steward 1937, 1938; Zigmond 1986). The Chemehuevi are likened unto the Kawaiisu, only more desert oriented; likewise, the Vanyume are likened unto the Serrano, but more focused along the Mojave River (Earle 2005). To be sure, the western and central Mojave Desert regions were a nexus between several aboriginal groups due to productive trade routes along the Mojave River. The overlap of Numic and Takic-speaking groups, taken as evidence of different cultural heritage, has been cited as a possible source of settlement and subsistence variability and inferences of land tenure between the Chemehuevi and the Vanyume (Earle 2005). A detailed overview of all ethnohistoric groups in the central Mojave Desert is out of the scope of this investigation; however, several manuscripts present a thorough discussion, including groups whose occupation was more likely to be tangential to the region (i.e., Kawaiisu and Panamint Shoshone) (e.g., Bean and Smith 1978; Earle 2004; Kelly and Fowler 1986; Kroeber 1925; Steward 1937, 1938; Winslow et al. 2011). For the approximate location of each ethnic group, refer to Figure 2-1. A detailed overview for the Serrano/Vanyume is presented below as the project site is located in Serrano/Vanyume territory.

Vanyume/Serrano

The Vanyume were a northern division of the Serrano Indians that generally inhabited the Mojave River corridor and the broader Barstow region (Bean and Smith 1978). Perhaps the most significant difference between the Vanyume and Serrano is that the Vanyume enjoyed good trade relations with the Mojave and Chemehuevi—both enemies of the southerly Serrano (Bean and Smith 1978). These trade relations contributed to easier access to foods and other goods not available on the central Mojave Desert floor, such as acorns. Bean and Smith (1978) and Kroeber (1925) note that the Vanyume sometimes visited the southerly foothills in the San Gabriel Mountains to trade for acorns. Father Francisco Hermenegildo Garcés noted that he had been given acorn meal at a Vanyume village southwest of what is currently Barstow. This account seems to confirm the notion that the Vanyume were distinct from the Serrano based on trade relations and geography.



DUDEK

FIGURE 2-1
Historic Mojave Desert Indian Territories

Ord Mountain Solar Energy Project

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Most information on the Serrano relates to the more southern areas near 29 Palms and Victorville (see Bean and Smith 1978; Strong 1929), with less information available about the Vanyume. However, it is generally inferred that subsistence among the Vanyume was based on a typical Mojave Desert adaptation, similar to other groups such as the Chemehuevi. Staple foods included Mesquite, pinyon, acorns, yucca, cactus, small seeds, chia, and ricegrass, with other plants supplementing the diet when available. Small game, including reptiles, rodents, and birds were the primary game targeted, but larger-bodied antelope and mountain sheep were taken if encountered (Bean and Smith 1978). Subsistence technology was relatively standard and included bows and arrows, throwing sticks, traps and snares, deadfalls, millingstones and handstones, and mortars and pestles; although the daily economic significance of any one of these is not well understood. Communal hunting (deer and rabbit) and gathering (acorn and mesquite) events were sometimes organized on an annual basis; Bean and Smith (1978) reporting that community activities were organized during the annual mourning ceremony (see also Drucker 1937). The Vanyume/Serrano also had a relatively standard material culture consisting of cordage-based containers, mats, and baskets, undecorated brownware pottery (paddle and anvil method), with basketry providing supplemental containers of various kinds, winnowers, and as hoppers for portable stone mortars (Drucker 1937).

Vanyume settlement was centered on single families, with dwellings consisting of basic circular wood lattice structures covered with either brush or mats as available (Drucker 1937). Like the Chemehuevi, more substantial dwellings occurred at seasonal villages; including shade structures, sweat houses, and granaries (elevated acorn or seed/nut storage facilities).

2.2.8 Historic Period

Unlike the coastal areas of California, the Mojave Desert was not intensively explored by the Spanish in early historic times, remaining beyond the limit of Hispanic settlement during the period of Mexican rule, that ended after the Mexican-American War of 1848. The first visit to the region by the Spanish was made in 1772 by Pedro Fages, who was searching for deserters from the Spanish army. In 1776, Father Francisco Hermenegildo Garcés traveled the course of the Mojave River across the desert and the mountains westward through the Tejon Pass. A portion of the Garcés route was the first documented use of what was eventually called the Old Spanish Trail, an important transportation route between southern California and Santa Fe. Garcés' venture into the Mojave Desert while traveling from Sonora to Los Angeles is an example of the many attempts to find pathways through the desert, although it would appear from his writings and his dealings with military Captain Fernando Rivera that Garcés was more concerned about good relations with native populations. In any case, a stable trade route was not established until well after Mexico achieved independence from Spain in 1821, when Antonio Armijo opened a trade route between Santa Fe and Los Angeles between 1829–1831 (DOI

2001). The newly established trade route enhanced economic ties between Mexican colonies for a short time until 1848 when the Spanish ceded much of its territory to the United States. Other explorers made more regular visits to the Mojave Desert beginning in the late 1820s. Early explorers included trappers Jedediah Smith and Joseph Walker. Kit Carson, a trapper on Jedediah Smith's 1828 expedition, later served as guide for John C. Frémont's exploratory expedition in 1844 traveling parts of the Old Spanish Trail. Although the exact route is unknown, and likely varied over time, the trail is generally thought to proceed through Silurian Valley from Salt Spring, along the west side of Silurian Lake, across Red Pass, and down to Bitter Spring, then south to the Mojave River (Duffield-Stoll 1998).

The Old Spanish Trail (also known as the Santa Fe Trail or Mormon Road) is currently a listed National Historic Trail (CA-SBR-4272H/CHL 576), and as Winslow et al. (2011) correctly asserts, it was a corridor made up of a series of roads and trails between common points connecting New Mexico and California with its period of significant use occurring between Garces' initial travels in 1776 through the exploratory mining days prior to 1882. It was originally named by John Fremont after his 1844 scientific expedition during which he surmised that he was following the original Spanish trail (DOI 2001; Winslow et al. 2011). With publication of the trail by the U.S .Government after Kit Carson took the maps and news to Washington, D.C., including news of California gold strikes, the "49ers" gold rush was born (Winslow et al. 2011).

The Old Spanish Trail likely has its roots in ancient Native American trail systems; in this sense, the act of blazing the trail by the Spanish was more an act of Indian suppression than of finding appropriate terrain. Following Spanish and Mexican use of the trail, trappers, emigrants, and especially miners made use of it for various purposes, leading to segments of the trail being given different names (see Winslow et al. 2011).

Lucerne Valley

Settlers arrived in Lucerne Valley in the 1870s, with a way station set up by mid-1880s for travelers to rest and get water (Owen, n.d.). Settlement followed shortly after the 1867 battle at Chimney Rock (California Historical Landmark 737), the final fight in a series of hostilities between settlers in the San Bernardino Mountains and Paiute, Chemehuevi, and Serrano Native Americans throughout the 1860s (Lazenby n.d.).

Jim Goulding came to Lucerne Valley in 1897 from Colorado, after brief stay in San Bernardino, settling near Rock Spring (Chickering 1948). Goulding took over Box S Ranch, which was the defacto name of the area, and began drilling for water and mining. Goulding put in orchards a few years later, and was shortly followed by homesteaders once reliable water was established

(Chickering 1948). Alfalfa, called Lucerne by the Mormons, became a staple crop of the valley within a few years, leading to the official naming of the valley and town. Fruit ranches, turkey farming, poultry and egg raising, and rabbit ranching for meat and fur were also advertised as desirable industries for newcomers (Login 1928).

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3 METHODS

This study consisted of a records search encompassing a 1-mile radius around the proposed project area at the South Central Coastal Information Center (SCCIC), at California State University, Fullerton, an intensive pedestrian survey of the entire APE, and an evaluation of cultural resources identified in the project APE. The SCCIC records search, performed in July 2016, also included a review of the Office of Historic Preservation (OHP) Determinations of Eligibility (DOE) file and Directory of Historic Properties (DHP), California Points of Historical Interest, California Historical Landmarks, Survey of Surveys: A Summary of California's Historical and Architectural Resource Surveys (1986). All previously recorded cultural resources and previous cultural resources investigations were plotted on a records search map and reviewed to assess the potential for discovery of cultural resources within the project area. Records search results are included in Confidential Appendix A.

A Class III intensive pedestrian survey was performed using standard archaeological practices. The entire project APE was surveyed at 15-meter interval transects oriented to cardinal directions. A Global Positioning System (GPS) receiver with sub-meter accuracy was used to verify the location of the APE, survey transects, and to record any cultural resources identified during the survey. Evidence for buried cultural deposits was opportunistically sought by examining rodent burrow spoils and natural and artificial erosion exposures. Field notes and photographs were used to document field conditions at the time of the survey. The survey was conducted by Dudek archaeologists Philip Sharp-Garcia, Sarah Lewis, Mark Abelon, Brad Comeau, and Scott Wolf from July 5-9, 2016.

For the purposes of site definition, a minimum density of three or more artifacts in a 25 square meter area was used to constitute an archaeological site, as was the presence of any feature (i.e., hearth). Any separation of 50 meters or more between artifacts was considered justification for delineation of a site boundary. Isolated finds consisting of fewer than three artifacts within a 25 square-meter area were recorded separately from sites, including the use of a different numbering scheme. All prehistoric and historic sites and isolates identified during the inventory within or immediately adjacent to the APE were recorded in their entirety on California Department of Parks and Recreation Form DPR 523 (Series 1/95), using the Instructions for Recording Historical Resources (Office of Historic Preservation 1995). Each site was also evaluated for eligibility under CEQA.

The gen-tie line corridor inventory performed by ICF (2016) as part of the Calcite Substation project included a records search at the SCCIC in August 2016 and a pedestrian survey of a 400 ft. wide corridor (200 ft. on either side of the centerline of the gen-tie). The pedestrian survey

was performed on September 19, 2016. The ICF survey utilized the same methodology as the survey of the solar site, although transects were spaced at 10 meter intervals.

3.1 Native American Consultation

As the lead agency under CEQA, the County is responsible for and will be performing formal government-to-government consultation with Native American Tribes under California Assembly Bill 52. The County will conduct formal consultation, and any information obtained through those processes will be included in subsequent drafts of this report. In addition, Dudek contacted the Native American Heritage Commission (NAHC) to request a search of the Sacred Lands File (SLF) on July 15, 2016. The NHC replied on July 21, 2016 stating their search of the SLF was negative, and provided a list of local Native American tribes to contact who may have additional information. Letters were sent to each of the tribes the week of September 26, 2016 notifying them of the project and asking for any additional information and/or concerns they have regarding resources in the project area. Any responses received from those letters or through formal consultation under AB 52 will be incorporated into subsequent drafts of this report.

4 RESULTS

4.1 Record Search Results

4.1.1 Previous Archaeological Studies

The records search identified five previous studies which address the records search area, including a survey by SWCA (Backes et al. 2009) which encompassed approximately 90% of the project site (Table 1). A draft report of an updated version of the SWCA report (Backes et al. 2011) which addresses the original survey area and six additional parcels, which is not on file at the SCCIC, was provided to Dudek separate from the records search. With this additional acreage surveyed in 2011, the entire APE of the current project has previously been surveyed, including the gen-tie parcel. An inventory for telecommunications and gen-tie transmission lines associated with a previously proposed solar project in the area (Winslow and Andrews 2013) covered a small portion of the southern end of the APE. Overall, only a small portion of the records search area has been surveyed previously.

Table 4-1
Previous Archaeological Studies Identified in the Records Searches

NADB / SCCIC Record Number	Year	Title	Author
Studies Covering Portions of the Records Search Area			
1065158 / SB-05158	2005	Deteriorated Pole Replacement Project Archaeological Survey of Ten Pole Locations on the Poco 33 kV, Cement 33 kV, Rabbit 33 kV, Sky Hi 12 kV, and Cushbury 33 kV Transmission Lines, San Bernardino County, California.,	Ahmet, Koral and Lerch, Michael K.
1066512 / SB-06512	2009	Cultural Resources Survey for the Lucerne Valley PV Solar Project, San Bernardino County, California.	Backes, Clarus, Jessica DeBusk, and John Dietler
SB-07020	2011	Supplemental Class III Archaeological Survey of a Redundant Fiber Optic Line for the Granite Mountain Wind Energy Project, San Bernardino County, CA	Woodman, Craig
1067273 / SB-07273	2011	Archaeological Survey for the Southern California Edison Company: GRM Project in Lucerne, CA (2012 WCR Rabbit 12kV-BLF Addition: IO 319221/TD520570; RSOC CWA-210.	Orfila, Rebecca S.
1067366 / SB-07366	2013	Class III Inventory for the Granite Wind Energy Telecommunication Lines Granite Mountain, Gentie Line and Jasper Substation Interconnection Projects, San Bernardino County, California.	Winslow, Diane and Sherri Andrews
N/A	2011	*Draft* Cultural Resources Survey Report for the Lucerne Valley PV Solar Project, San Bernardino County, California.	Backes, Clarus, Jessica DeBusk, Samantha Murray, and John Dietler

4.1.2 Previously Recorded Sites

The records search identified 29 resources, including 20 sites and nine isolates. Of these, three sites and six isolates are located within the APE, and none are within the gen-tie corridor. Resources within the APE consist of historic concrete foundations/structural pads, troughs, and wooden utility poles associated with agriculture, and isolated granitic millingstones, flakes, and a biface. The remaining resources include 11 roads/trails/highways, one historic refuse deposit, one well, one mine with a refuse scatter, one transmission line, one prehistoric village, one bedrock milling site, and three isolates (Table 2).

All nine resources previously identified in the SWCA studies (Backes et al. 2009; Backes et al. 2011) were recommended as not eligible for listing in the CRHR and as not significant under CEQA. No resources were documented by SWCA (Backes et al. 2011) in the gen-tie parcel.

Table 4-2
Previously Identified Archaeological Sites in the APE and the 1-Mile Record Search Area

Resource Number	Period	Type	CRHR Status	Description
Resources within the APE				
P-36-021160 / CA-SBR-13657	Historic	Historic Agricultural Remains	Not Eligible	Various concrete pads and pipe fittings
P-36-021161 / CA-SBR-13658	Historic	Wooden Utility Poles	Not Eligible	Numerous groupings of wooden power poles
P-36-021162 / CA-SBR-13659	Historic	Historic Agricultural Remains	Not Eligible	Various concrete pads and pipe fittings
P-36-021163	Prehistoric	Isolate	Not Eligible	Granitic millingstone
P-36-021164	Prehistoric	Isolate	Not Eligible	Chert flake
P-36-021165	Prehistoric	Isolate	Not Eligible	Basalt biface
P-36-021166	Prehistoric	Isolate	Not Eligible	Basalt flake
P-36-021167	Prehistoric	Isolate	Not Eligible	Granitic millingstone
P-36-021168	Prehistoric	Isolate	Not Eligible	Chert flake
Resources in the 1-mile Buffer				
P-36-002145 / CA-SBR-2145	Prehistoric	Village Site/Artifact Scatter	Undetermined	Flakes, points, millingstones
P-36-003750 / CA-SBR-3750	Prehistoric	Bedrock Milling Site	Undetermined	3 to 5 bedrock milling features
P-36-014876	Historic	Transmission Line	Undetermined	Steel lattice transmission towers
P-36-021200 / CA-SBR-13662	Historic	Trash Scatter/Mine	Not Eligible	Open pit with dilapidated wooden shoring
P-36-021201 / CA-SBR-13663	Historic	Well	Not Eligible	Uncapped well of unknown depth
P-36-021202	Prehistoric	Isolate	Not Eligible	One chert flake

Table 4-2
Previously Identified Archaeological Sites in the APE and the 1-Mile Record Search Area

Resource Number	Period	Type	CRHR Status	Description
P-36-024156 / CA-SBR-15341	Historic	Road	Undetermined	Single lane dirt road
P-36-024157 / CA-SBR-15342	Historic	Road	Undetermined	Segment of a historic period road
P-36-024158 / CA-SBR-15343	Historic	Road	Undetermined	Segment of a historic period road
P-36-024189 / CA-SBR-15374	Historic	Road	Undetermined	Single lane, graded, dirt road and USGS benchmark from 1953.
P-36-024190 / CA-SBR-15341	Historic	Road	Undetermined	Two segments of historic period roads.
P-36-024224 / CA-SBR-15409	Historic	Road	Undetermined	Segment of a historic period road.
P-36-024225 / CA-SBR-15410	Historic	Refuse Deposit	Undetermined	Small trash scatter
P-36-024245 / CA-SBR-15430	Historic	Road	Undetermined	Single-lane, graded, dirt road.
P-36-027410	Historic	Road	Undetermined	Barstow Road.
P-36-028356 / CA-SBR-28356	Historic	Road	Undetermined	Unnamed dirt road.
P-36-028357 / CA-SBR-28357	Historic	Road	Undetermined	Single asphalt paved road, Huff Road.
P-36-028365 / CA-SBR-28365	Historic	Road	Undetermined	Meridian Road, dirt road.
P-36-028438	Historic	Isolate	Not Eligible	Sanitary food can.
P-36-028439	Historic	Isolate	Not Eligible	Church-key opened beverage.

The records search performed by ICF identified one cultural resource in the gen-tie corridor. This resource, P-36-028005 / CA-SBR-17465, is the historic Barstow Road/State Route 247 and associated historic debris scatters, collapsed structure, and sign frame. The road itself was previously recommended as eligible for listing in the National Register of Historic Places (NRHP) under Criterion A, and as eligible for listing in the CRHR under Criterion 1 (Pacific Legacy 2015). The other components of the road were recommended as not eligible on their own or as contributing elements to the overall eligibility of the resource.

4.2 Field Results

The pedestrian survey of the APE identified two new resources (OM-PK-004 and OM-PK-009) and relocated the three previously recorded historic period resources (CA-SBR-13657, CA-SBR-13658, and CA-SBR-13659). None of the six previously recorded isolates in the APE were relocated. Cultural resource locations can be seen on Figure 4-1 (Confidential Appendix B) and in individual site sketch maps in each site form (Confidential Appendix B).

The pedestrian survey of the gen-tie corridor did not identify any new cultural resources (IFC 2016). The gen-tie corridor was found to cross P-36-028005, Barstow Road, but all of the associated features and artifacts are well outside the gen-tie corridor.

4.2.1 Previously Recorded Sites

CA-SBR-13657

This resource was originally recorded by SWCA in 2009 to consist of numerous concrete foundations/pad, concrete troughs, steel pipes and fittings, and electrical parts in an 890-x-240-m area. All of the features appear to be associated with the agricultural activities in the area, however none of the structures associated with the foundations/pads were present at that time to confirm the exact nature of the features. The electrical parts include meter and breaker boxes, which appear to be associated with the water pipes. A scatter of milled wood, metal, and concrete debris were also noted at that time. No refuse deposits or scattered artifacts were present. The site was interpreted as a mid-twentieth century irrigation site for agriculture or livestock with little data potential.

The site was relocated during the current survey. All previously noted features and the debris scatter were relocated in the same locations and condition as previously noted. Other than four rectangular concrete troughs, none of the features are intact. Historic photographs and aerial images were reviewed at www.historicaerials.com. Structures are noted at this location on the 1956, 1974, and 1982 topographic maps, but are no longer present on the 1993 map. The aerial image from 1952 shows two built structures at the site where two of the concrete troughs are located, but the image is inconclusive if these are the troughs that are currently present. Aerial images from 1969 indicate long, narrow structures are present on the foundations, although the image is low quality and it is difficult to decipher the function of the structures. The structures appear to be present in the 1989 image, but are clearly destroyed by the 1995 image. Based on the location and time of construction/use, the site is likely associated with the residence identified as site OM-PK-004 (see below).

Based on the imagery and maps, this site likely originated around 1950, and was expanded upon in the 1950s and early 1960s. SWCA (Backes et al. 2009) recommended this site as not significant under CEQA and not eligible for listing in the CRHR. Dudek concurs with the original evaluation by SWCA.

CA-SBR-13658

This resource was originally recorded by SWCA in 2009 to include a series of wooden utility poles, likely associated with agricultural activities (water pumps) and structures in the area. A total of 20 poles were recorded along Desert Lane, Corwin Road, and unnamed dirt roads. Dated service nails indicate that the earliest poles are at least as old as 1940, and also have service stamps throughout the 1960s. Some of the poles have been replaced by newer poles, which lack date stamps or other identifiers.

During the current survey, the poles were relocated. No changes to the poles since the original recordation were noted. In addition to the poles, four concrete troughs were noted adjacent to the poles. The four troughs are spaced sporadically along the north side of Desert Lane. These troughs are all approximately 4-x-5-ft and 3 ft. high and are generally similar to all other troughs in the area. A slightly larger concrete pad surrounds the troughs. The troughs are not present on the 1952 aerial image available at www.historicaerials.com but they are present on the 1969 and subsequent images. All four of the troughs are basic poured concrete with large gravel inclusions and lack unique features or components.

The electrical box and indeterminate structure are located at the northeastern terminus of the utility poles. The structure is a concrete cylinder approximately 6 ft. tall and 3 ft. in diameter. A metal pipe is present inside the cylinder, which may have connected to metal water pipes in the area, but that inference cannot be confirmed. The actual pump and associated devices are no longer present. Based on the presence of the pipes, it is likely the structure and a function related to pumping water. The electrical box is attached to the northeastern-most utility pole identified in the original site record. These features may be present on the 1969 aerial, but due to poor resolution they cannot positively be discerned.

SWCA (Backes et al. 2009) recommended the utility poles as not significant under CEQA and not eligible for listing in the CRHR. Dudek concurs with the original evaluation by SWCA. The newly recorded troughs, electric box, and concrete structure were not previously evaluated. It is presumed that the site components likely relate to the nearby residence (see OM-PK-004, below). These features do not alter the overall significance of the site and therefore the previous determination of not significant under CEQA and not eligible for listing in the CRHR stands.

CA-SBR-13659

This site was originally recorded by SWCA in 2009 to consist of the at least three concrete foundations/pad, steel pipes and pipe fittings, electrical parts, and fence segments in a 560-x-530-m area. No structures were noted at the time associated with the foundations, although bolts were present in the concrete, indicting structures were attached to them at some point. Vertical steel pipes were noted at a couple concrete pads, indicating that they were well heads. A sparse scatter of wood, metal and concrete was also noted at the site. Electrical parts included breaker boxes and electrical boxes attached to wooden poles. An east-west dirt road was noted to bisect the site.

The site was relocated during the current survey. All previously noted features and the debris scatter were relocated in the same locations and condition as previously noted. No intact structures are present. Topographic maps available at www.historicaerials.com show one structure and one water basin/feature or corral on the south side of the road at this location in 1956 and 1974. The 1982 topographic map shows a single structure of a different size and shape than earlier maps, and is situated on the same location as both the older structure and water feature. No structure is present on the 1993 topographic map. The 1952 aerial image shows what appears to be either the water feature or corral south of the road, but no other features. The 1969 aerial shows a variety of activity at the site, but nothing can be definitively discerned. The water feature/corral is not present. Small features of indeterminate origin are present south of the road, and are likely the remains of the structure noted on the early topographic map. A concrete slab is present north of the road, which corresponds to the extant slab as of 2016. No structures can be discerned from the image. The fences noted in the site record are barely discernable in the image. In the 1989 and subsequent images it is clear no structures are present at the site. Based on the age and location, it is likely that this site is associated with the residence recorded as OM-PK-004 (see below).

SWCA (Backes et al. 2009) recommended this site as not significant under CEQA and not eligible for listing in the CRHR. Dudek concurs with the original evaluation by SWCA.

P-36-028005 / CA-SBR-17465H

This resource is the historic Barstow Road / State Route (SR)-247. Two segments of the road have been recorded as historic, one of which (Segment 2) crosses underneath the proposed gen-tie corridor. In addition to the road, this resource includes multiple can scatters, a sign, and remnants of a structure, all of which are outside the gen-tie corridor. SR-247 was the main travel corridor between Yucca Valley, Lucerne Valley, and Barstow. The two segments of the road which have been recorded were constructed in the 1910s-1920s (Segment 1) and the 1940s-1950s (Segment 2). The gen-tie corridor intersects Segment 2. This resource was evaluated by Pacific Legacy in 2015. The road segments were recommended to be eligible for listing in the

NRHP under Criterion A and the CRHR under Criterion 1, while the associated artifacts and features were recommended as not eligible, either individually or as contributing elements to the overall eligibility (Pacific Legacy 2015).

Although the exact placement of individual gen-tie line poles has not yet been determined, none of the poles will be placed in the road, and, given the approximately 500 ft. spacing between poles, none of the poles are expected to be adjacent to the road. The road itself will not be altered as part of the project (via grading, widening, etc.). Therefore, there will be no direct impacts to the resource.

The gen-tie line will extend southeast from the APE to the substation. And will generally run parallel to three existing steel lattice electric transmission lines. The existing transmission lines, as well as numerous smaller distribution lines, are prominent visual features of the local landscape (Dudek 2016). The existing lines blend in with the surrounding area at greater distances, and become more prominent with proximity (Dudek 2016). Although the steel or concrete monopoles for the gen-tie would not blend into the visual landscape as well as the lattice towers, the proximity to the towers "would reduce the potential for the gen-tie line to significantly detract from the existing visual setting and significantly obstruct existing views" (Dudek 2016:37) and "would minimize the potential visual effects on existing views available to SR-247 motorists as the pass through the project area" (Dudek 2016:39). Therefore, construction of the gen-tie would not have a significant indirect (visual) impact on the rural landscape of motorists on the road.

4.2.2 Previously Recorded Isolates

Six isolates (P-36-021163, P-36-021164, P-36-021165, P-36-021166, P-36-021167, and P-36-021168) were identified by SWCA during a survey of the project site in 2009 (see Figure 4-1). These include two millingstones, one biface, and three flakes. None of the isolates were relocated at this time. It is unclear if the isolates were collected by looters, or were obscured by disturbances or vegetation. They were determined not eligible for inclusion on the CRHR and are not significant under CEQA by SWCA (Backes et al. 2009). Dudek concurs with the determination by SWCA.

4.2.3 Newly Recorded Sites

OM-PK-004

Site OM-PK-004 is a one-story, single-family residence with associated reservoir and corral situated on 19.58 acres. The residence is currently vacant and has been subject to vandalism. The building is roughly rectangular in-plan with a side gable roof sheathed in rolled asphalt with overhanging eave. The building is situated on a concrete pad foundation. Exterior walls are

predominantly concrete block with painted vertical wood planks filling in the gable. The eastern portion of the residence appears to be an addition (date unknown). The residence is accessed via a concrete walkway leading up to a side entrance located on the north elevation. The west elevation features an added covered porch (date unknown) supported by simple wooden posts with corrugated metal shed roof. The south elevation features an eave-wall chimney that extends several feet above the roofline. There are various sized openings for fenestration throughout the building; however, all of the windows and doors have been removed. The interior of the residence has been vandalized and appears to have been used by squatters. The rear of the residence features a square-shaped, earthen reservoir measuring approximately 100 feet square. There is also a small rectangular corral located on the easternmost portion of the property measuring approximately 40 x 135 feet.

Historic aerial photographs (NETR 2011) of the property from 1952 indicate a very faint outline of the above-ground reservoir (perhaps indicating the early stages of development of the property). Photographs from 1969 show that the house has been constructed just north of the reservoir and a small orchard has been planted directly east of the house. At this time, the residence is surrounded by a cluster of trees. By 1989, the orchard appears to be gone and much of the dense vegetation surrounding the house has been removed. A corral has also been added to the eastern-most portion of the property. At this time there appears to be a substantial amount of debris (unidentifiable material) scattered throughout the property, likely related to the fact that the property was owned by a cement block/building supply company at this time. By 1995, much of the debris around the property appears to have been removed, but no discernable changes have been made to the property. Subsequent aerial images do not reveal any new information about the property.

San Bernardino County Assessor parcel records provide ownership information for the subject property dating back to the 1970s. A review of ownership records reveals that the property has changed hands numerous times over the last several decades. No information regarding previous owners could be found prior to 1973. Owners identified include Joan and William Hirtec (1979-1981), Nancy and David Osborne (1981), Richard and Margit Stafford (1981-1983), Deltab Corporation (1983), Shaw Resources, Inc. (1983-1985), John Babcock (1985-1986), Fredericks Cement Block/Building Supply, Inc. (1986-1990), Ivan Hancock (1990-1993), Dawn Nugen and Sherilyn Nelson (1993-1997), Midfirst Bank (1997), Secretary of Veterans Affairs (1997-1998), Inez and Robert Mulligan (1998-2007), and Romulo and Dolores Damaso (2007-2016). No significant persons were found to be associated with the subject property.

In an effort to draw people to the region, Lucerne Valley was advertised to potential buyers as much more than just a "dry, sandy, desolate land." Some of the benefits highlighted were the plentiful artesian wells, which could draw water from 8-28 feet below the surface and produce thousands of gallons of water to support gardens and crops. The first artesian well in the valley

was established in 1901 by James E. "Dad" Goulding, who named his 160-acre homestead ranch "Lucerne" (founded in 1897) because it was a great place to grow alfalfa (Lucerne is the Swiss word for alfalfa). Alfalfa and fruit ranches were said to be featured crops in the region. Turkey farming, poultry and egg raising, and rabbit ranching for meat and fur were also advertised as desirable industries for newcomers (Login 1928).

While not confirmed through research of historic Government Land Office patents, the subject property is likely one of many small residences constructed throughout San Bernardino County (between Twentynine Palms and Barstow) in the 1950s in response to passage of the federal Small Tract Act of 1938, which authorized the lease of up to 5 acres of public land for recreational purposes or use as a home, cabin, camp, health, convalescent, or business site to U.S. citizens. If the applicant constructed a small dwelling within three years of the lease, they could file for a patent (or deed) after purchasing the parcel for its appraised value at the regional land office. By the mid-1950s, a number of local companies began manufacturing inexpensive, pre-fabricated cabins that fulfilled the minimum building code requirements. These were typically one room homes that included rough plumbing, windows, siding, and a concrete slab floor. This small, mid-century homestead movement allowed people to own a piece of land even if the property itself was virtually worthless. Most of these "jackrabbit" homesteads have been abandoned and since fallen beyond repair. The majority of these residences are located in the Morongo Basin, but they can be found scattered throughout the desert landscape in San Bernardino County (Stringfellow 2009).

The residence is a poor example of a ubiquitous resource type that lacks both historical associations of significance and requisite integrity. The property does not appear eligible for listing in the CRHR under Criterion 1 for its associations with historical events or patterns of development. Archival research failed to indicate associations with persons of significance; therefore, it does not appear eligible for the CRHR under Criterion 2. The property is a ubiquitous and unremarkable example of a mid-century tract cabin. Further, it has no known architect and fails to retain integrity of its original design, materials, workmanship, feeling, and association as a result of alterations and vandalism. Therefore, it is not eligible under Criterion 3 for its architectural associations. Finally, no evidence was discovered to warrant consideration under Criterion 4. The property is also not eligible as a contributor to an historic district. Therefore, the site is recommended as not eligible for listing in the CRHR and not significant under CEQA.

OM-PK-009

This resource consists of four concrete troughs, presumably used for water storage. Each of the troughs is approximately 4-x-5-feet and 3 feet high and is similar to the troughs identified at CA-

SBR-13657. Each trough also has a foundation/pad that is about 1 foot wider on all sides than the walls of the trough. The troughs are arranged in a 2-x-2 grid, intersected by two barbed wire pasture fences, such that each trough would have been in the corners of each pasture. The troughs are visible on the 1969 aerial photograph of the area, but are not present in the 1952 aerial. None of the topographic maps dating back to 1956 show structures in this location. Therefore, the troughs are at least 46 years old, and may be up to 65 years old. Given the similarity in size, construction style, and date with the troughs at CA-SBR-13657, these troughs were likely built by the same farmer/rancher, who likely lived in the house at site OM-PK-004.

A water well and pipe are present adjacent to the northwestern trough. It is unclear if this feature was built at the same time as the troughs, or sometime later. This well cannot be discerned on the 1969 aerial, but other similar wells in the area are clearly not on the 1969 aerial, suggesting this one was likely built later and is unlikely to currently be old enough to qualify as historic. No artifacts are present at the site.

The site is not associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States (Criterion 1/A); the site is not associated with the lives of persons important to local, California, or national history (Criterion 2); and the site does not embody the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values (Criterion 3). This site does not contain an archaeological deposit that can be excavated, and therefore does not contain any data potential that could provide information regarding the history of the area (Criterion 4). Therefore, the site is recommended as not eligible for listing in the CRHR and not significant under CEQA.

4.2.4 Survey Conditions

The entire APE has been subjected to grading and/or disking which leveled the ground surface to nearly flat condition. Virtually none of the original slope of the alluvial fan in the area remains intact. The only portion of the APE which hasn't been graded/disked is the southeastern corner where a small rock outcrop is located. Saltbush is the dominant vegetation on site, which has re-grown following abandonment of the agricultural land. Minimal grass cover has also grown in scattered locations, allowing for excellent (>75%) ground surface visibility. Figures 4-2 and 4-3 show general site conditions at the site of the survey. ICF's survey of the gen-tie line identified similar conditions in that corridor.

Figure 4-2 Project Site Overview, Facing West

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Figure 4-3 Project Site Overview, Facing West

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5 CONCLUSIONS AND RECOMMENDATIONS

The proposed project consists of a 60 MW solar facility located on 484 acres of disturbed ranch/agricultural land. The pedestrian survey of the APE identified two new historic sites (OM-PK-004 and OM-PK-009) and relocated three previously recorded historic period sites (CA-SBR-13657, CA-SBR-13658, and CA-SBR-13659). Six previously recorded prehistoric isolates were not relocated. The five historic sites consist of a single family home, various ranching/agricultural features, such as water troughs, foundations/slabs for indeterminate structures, and utility poles, which likely are associated with the agricultural activities. Although no definitive connection can be made, it is likely that the occupant of the home at site OM-PK-004 was likely the farmer/rancher utilizing the surrounding fields and probably constructed the various structures and troughs.

Due to the lack of existing structures which would have been built on the foundations/pads at site CA-SBR-13657 and CA-SBR-13659 it is not possible to determine their exact functions or architectural styles. The troughs and utility poles present CA-SBR-13657, CA-SBR-13658, and OM-PK-009, are still generally intact. However, none of the features are unique or notable in any way.

All of the resources present in the APE were evaluated for significance under CEQA. None of the sites are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage (Criterion A); none of the sites are associated with the lives of persons important in our past (Criterion B); none of the sites embody the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a an important creative individual, or possesses high artistic values (Criterion C); and none has yielded, or may be likely to yield, information important in prehistory or history (Criterion D). Therefore all of the sites are recommended as not significant and not eligible for listing in the CRHR. In accordance with CEQA, no historical resources are present in the APE. and no historical resources will be impacted in the APE.

One resource, P-36-028005, intersects the gen-tie line corridor. This resource, Barstow Road / SR-247, was previously recommended eligible for listing in the CRHR and NRHP under Criteria 1 and A, respectively, and is considered a historical resource under CEQA. The road will not be modified by the project and therefore no direct impact to the resource will occur. The gen-tie will be located adjacent to three existing steel lattice electric transmission lines which cross the road. Dude to the proximity of the gen-tie lines to the existing transmission lines, the gen-tie will blend into the existing scenery and will therefore not cause an indirect (visual) impact to the resource.

Based on the level of previous disturbance and minimal number of artifacts noted at the site, there is a low potential for unknown historic resources or historic properties to be present and

there is a low potential to impact unknown archaeological sites. Therefore, no further cultural resources work is recommended for the current project.

In the event that previously unknown archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, can evaluate the significance of the find and determine whether or not additional study is warranted, in consultation with the County. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the remains are determined to be Native American, the Coroner shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the MLD from the deceased Native American. The MLD shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

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NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

Authors:	Brad Comeau, Micah Hale, Samantha Murray, and Phillip Sharp-Garcia
Firm:	Dudek
Client/Project Proponent:	NextEra Energy Resources
Report Date:	October 2016
Report Title:	Cultural Resources Inventory and Evaluation Report for the Ord Mountain Solar Project, Lucerne Valley, San Bernardino County, California
Type of Study:	Cultural Resources Inventory and Evaluation
New Sites:	OM-PK-004, OM-PK-009
New Isolates:	None
Updated Sites:	CA-SBR-13657, CA-SBR-13658, CA-SBR-13658, P-36-021163, P-36-021164, P-36-021165, P-36-021166, P-36-021167, P-36-021168, P-36-028005 (CA-SBR-17465)
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APPENDIX A

Records Search Results
(Confidential)

APPENDIX B

Resource Location Maps and Site Forms
(Confidential)

APPENDIX C

Native American
Correspondence Documentation

APPENDIX D

ICF Cultural Resources Inventory Report for the Calcite Substation Project (Confidential)

Addendum to Cultural Resources Report

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August 28, 2018

Andy Flajole
NextEra Energy Resources
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Subject: Cultural Resources Addendum Report for the Calcite Substation and Ord Mountain Solar Projects, San Bernardino County, California

Dear Mr. Flajole:

This letter presents the results of additional cultural resource work performed for the Calcite Substation and Ord Mountain Solar Projects, located in the Lucerne Valley, San Bernardino County, California. All work was performed in accordance with the California Environmental Quality Act (CEQA) and San Bernardino County (county) guidelines. The letter is an addendum to the *Cultural Resources Inventory and Evaluation Report for the Ord Mountain Solar Project, Lucerne Valley, San Bernardino County, California* (Comeau et al. 2016) prepared by Dudek and the *Final Cultural Resources Inventory Report for the Calcite Substation Project, Lucerne Valley, California* (Chmiel et al. 2016) prepared by ICF, which was incorporated into Dudek's report as Appendix D. Subsequent to the completion of both the Dudek and ICF reports, potential impacts to four cultural resources in the area of potential effect (APE) were identified (SBR-2145, P-36-14876, and ICF-CAL-1, and ICF-CAL-2). This addendum documents the additional work performed for these resources, as well as impact analyses for each. All four resources are shown on Figure 4 in Confidential Appendix B to the ICF report.

1.0 ARCHAEOLOGICAL SURVEY AND DOCUMENTATION REVIEW

Two archaeological sites (ICF-CAL-1 and ICF-CAL-2) were identified along the Gen-tie alternative alignment and one site (SBR-2145) was identified along the telecommunication line that are proposed as part of the two projects. These sites were not evaluated for significance under CEQA and impacts to each were not analyzed as part of either study.

1.1 Field Methodology

Dudek archaeologists Brad Comeau, MSc, RPA and Courtney Davis, BA, survey of the mapped location of site SBR-2145 to verify the site location and horizontal extent, paying particular

attention to the currently proposed alignment of the Telecommunication Rt. 2 to identify a route for the telecom line to be installed in a manner that would avoid impacts to the site. The survey was conducted in accordance with the Secretary of the Interior's Standards and Guidelines for archaeology, commensurate with the methods described in Dudek's report (Comeau et al. 2016). Formal transects spaced no more than 10 m apart were walked through the mapped site boundary and surrounding area to identify surface artifacts and features. Dudek senior architectural historian Samantha Murray, MA completed the historic built environment impacts assessment. Ms. Murray meets the Secretary of the Interior's Professional Qualification Standards for architectural history.

1.2 Documentation Review

Sites ICF-CAL-1 (P-36-29900) and ICF-CAL-2 (P-36-29901) are located along the gen-tie alternative alignment. SICF-CAL-2 was recently evaluated by Dudek as part of another project (Pham et al. 2018, in prep.). The report was reviewed to identify the significance determination of the site in order to assess the potential for impacts to the site as part of the gen-tie alternative.

1.3 Results

SBR-2145

SBR-2145 was recorded in 1940 as a pre-contact village site containing groundstone, flakes, and projectile points. Dudek's archaeological survey of the site did not identify any artifacts or features within the mapped site boundary, a 20 meter wide corridor centered on the alignment of Telecom Rt. 2, which parallels an existing graded dirt road. A large pit has been excavated at the north end of the mapped site which appears to post-date the original recordation of the site. Based on the absence of artifacts and features, the archaeological site is not present within the survey corridor. As the site was mapped in the 1940s, it is likely that large-scale maps (15' USGS quadrangles) were used to identify the general location of the site, and therefore the site was likely mis-mapped when updated to 7.5' quadrangles. ASM Affiliates recently surveyed this area for another project (report in prep). As part of that study, ASM resurveyed the full extent of the mapped site and was unable to identify any artifacts or features (D. Winslow, personal communication, 2018). ASM determined that the site was either destroyed since its original recordation (presumably by excavation of the pit) or was incorrectly mapped and should not have been mapped here (D. Winslow, personal communication, 2018).

Regardless of whether the site was destroyed or mapped incorrectly, the site is not located in the alignment of the proposed telecommunication line, and therefore the site is not within the APE.

As no cultural resource exists in this location, an evaluation of significance under CEQA is not necessary, and there will be no impact to site SBR-2145.

ICF-CAL-1

This site (P-36-29900) was originally recorded by ICF as an historic homesite with one rectangular building, one concrete retention basin, and multiple wood outbuildings. The main building is shown on the 1955 USGS topographic map. This site has not been formally evaluated. However, during project design, NextEra has adjusted the alignment of the gen-tie to be placed on the north side of the road, and to have the poles span the length of the site. No earthwork would be performed in the site, and no poles would be constructed in the site. The site will be avoided by project design; therefore there would be no direct impact to the site.

ICF-CAL-2

ICF-CAL-2 (P-36-29901) was originally recorded by ICF as an historic refuse scatter adjacent to a dirt road. The site was reported to consist of 12 pieces of historic refuse mixed within a 1970s-era dump of modern refuse. Dudek revisited the site in 2018 for a separate project (Pham et al. 2018). During that survey, the site was expanded to the north to encompass nine features and a large, dispersed refuse scatter. The site was evaluated through the excavation of three excavation units, detailed documentation of all surface artifacts and features, and archival research. The site was found to contain cultural materials dating from the late 19th century through mid-20th century, as well as modern artifacts. The site likely is the result of multiple dumping episodes, and is likely related to the adjacent homesite recorded as ICF-CAL-1 (P-36-29900). As a result of the evaluation, the site was found to be not eligible for listing in the California Register of Historical Resources, and not significant under CEQA. Since the site is not significant, construction of the gen-tie alternative would have a less than significant impact on the site.

2.0 HISTORIC BUILT ENVIRONMENT IMPACT ANALYSIS

The focus of this impacts assessment is the removal of two transmission tower structures located on the National Register of Historic Places (NRHP)-eligible Southern California Edison (SCE) Lugo-Pisgah No. 1 line, and the addition of two new transmission lines and six associated towers. All tower removals, replacements, and adjacent/related new construction must by reviewed in consideration of the criteria of adverse effect (36 CFR 800.5).

2.1 Background

Previous Evaluations

In order to understand the impact of the proposed transmission tower removals, it is first necessary to examine previous evaluations of the resource and understand its historic context and significance. The SCE Lugo-Pisgah No. 1 and No. 2 transmission lines (P-36-014876/ CA-SBR-13115H) recently received a detailed update (Tinsley Becker 2013) which found the resource eligible for the NRHP under Criterion A and CRHR Criterion 1 for its "direct association with the history of the Boulder Dam / Hoover Dam construction and hydroelectric generation project, and for serving as the first two lines to transmit high voltage electricity to the Los Angeles region by the Southern California Edison Company" (Tinsley Becker 2013). The relationship of the subject SCE Lugo-Pisgah No. 1 line to adjacent/related lines is described below:

> The SCE Lugo-Pisgah No. 1 and Lugo-Pisgah No. 2 220kV Transmission Lines are modern-day segments of two larger transmission lines built in a shared Right-Of-Way between 1938 and 1941 as the SCE Boulder-Chino North (No. 1) and South (No. 2) 220kV Transmission Lines. The utility access road is associated and documented in this record. The First Boulder Line was historically the Boulder-Chino North 220 kV Transmission Line ('North' line) and today is the SCE Lugo-Pisgah No. 1 Transmission Line; the Second Boulder Line was historically the Second Boulder-Chino 220 kV Transmission Line ('South' line) and today is the Lugo- Pisgah No. 2 Transmission Line and are independent from the LA DWP Boulder Dam-Los Angeles No. 1, 2, and 3 lines initially constructed and put-in-service in 1936. SCE constructed a Third Boulder Line in 1945; the Third Boulder Line was historically the Chino- Hayfield 220 kV Transmission Line and is still in operation under multiple modern-day transmission line segment identifiers (Tinsley Becker 2013:1) .

The 2013 evaluation findings also noted that:

> The surrounding setting or scenic features of the Lugo-Pisgah No. 1 and No. 2 Transmission Lines have not been identified as a contributing element to the significance and NRHP eligibility of the lines, and significance of both lines does not originate from their aesthetic features, rather the importance of the Lugo-Pisgah No. 1 and No. 2 Transmission Lines is based on the electrical voltage technology, length of span, the historical connection and association with the Hoover Dam, and the conveyance of electricity between the Hoover Dam and the Los Angeles region. The Lugo-Pisgah No. 1 and No. 2 Transmission Lines do not constitute a scenic landscape or cultural landscape…

> …Identified tower types on the Lugo-Pisgah No. 1 and No. 2 lines include Type L (Dead End and Suspension), D (Dead End), H (Suspension), and S (Suspension) with the span between towers ranging from 776 feet (between Mile 131 Tower 3 and the Pisgah Substation Switchrack) to 2,386 feet (Mile 177 Tower 2 and Mile 177 Tower 3). Towers are steel lattice construction with concrete footings and measuring between approximately 90 to 95 feet in height with additional height created by leg and base extensions as needed.

2.2 Proposed Impacts

Transmission Tower Removals

Potential Impact 1. The project proposes to remove two existing 220 kV steel lattice towers (M169 T-1 and M169 T-2) located on the SCE Lugo-Pisgah No. 1, a contributing element of the larger SCE First (No. 1), Second (No. 2), and Third (No. 3) Boulder Transmission Lines (P-36-014876/ CA-SBR-13115H), which appears eligible for the NRHP/CRHR under Criterion A/1.

The 2013 evaluation found that the lines maintain a high level integrity, although some minor elements have been altered/replaced over time. In consideration of the fact that the resource was found eligible under NRHP/CRHR Criterion A/1 only, and not Criterion C/3 for its physical features, the removal of two transmission towers will not adversely affect the resource's NRHP eligibility. Although the project proposes to remove two towers, it also proposes to replace them with two new transmission structures in close proximity to the original tower locations. Because transmission lines require regular maintenance and repair in order to continue their function overtime, replacement of some equipment (e.g., small segments of line and transmission towers) is not uncommon, nor is it necessarily impactful to the larger resource. As stated in the most current DPR form for the resource (Tinsley Becker 2013), the significance of the Lugo-Pisgah No. 1 line is tied to its electrical voltage technology, length of the span, the line's connection to the Hoover Dam, and conveyance of power between the Hoover Dam and Los Angeles area. None of these key characteristics of significance would be impacted by removing and replacing two steel lattice towers. Therefore, the proposed removal of the two transmission towers would result in a less-than-significant impact/no adverse effect to historic properties.

New Transmission Lines and Structures

Potential Impact 2. By looping the existing Lugo-Pisgah No.1 220 kV transmission line into Calcite Substation, two new 220 kV transmission lines would be created. These new transmission lines would depart from the existing Lugo-Pisgah No. 1 line approximately 2,500 feet south of Calcite Substation, cross under SCE's Eldorado-Lugo and Lugo-Mohave 500 kV lines, and enter

Calcite Substation from the south. The loop-in would modify the Lugo-Pisgah No. 1 220 kV Transmission Line by creating two new line segments: the Calcite-Lugo 220 kV and the Calcite-Pisgah 220 kV transmission lines. The new 220 kV lines would require approximately six transmission structures; four single circuit structures and two double-circuit structures. The six new structures would require a new ROW ranging between approximately 100 and 200 feet wide (depending on structure types and line crossings) from SCE's existing ROW to the Calcite Substation Property. Typical structure foundations for each Lattice Steel Tower ("LST") would consist of four poured-in-place concrete footings and Tubular Steel Pole ("TSP") H-Frames would require two drilled poured-in-place concrete footings.

While the project proposes to add two new transmission line segments directly north of the SCE Lugo-Pisgah No. 1 and No. 2 transmission lines (P-36-014876/ CA-SBR-13115H), the new lines and associated equipment would be clearly differentiated from the original transmission lines as new construction. Further, this new work would simply be looping the existing Lugo-Pisgah into a new substation in close proximity. It would not disrupt the larger important historical connections associated with the conveyance of power between the Hoover Dam and Los Angeles, as these connections would still remain clearly evident. Although the proposed two new lines would cross under SCE's NRHP-eligible Eldorado-Lugo and Lugo-Mohave 500 kV lines, the new lines would not physically touch the existing lines or disrupt their existing tower spans. The 2013 evaluation clearly states that the surrounding setting/scenic features of the Lugo-Pisgah No. 1 and No. 2 Transmission Lines are not considered contributing elements to the significance and NRHP eligibility of the lines, therefore, the addition of new construction immediately adjacent to the original lines would not pose any significance impacts to the historical setting of the resource. Therefore, the proposed construction of the Calcite-Lugo 220 kV and the Calcite-Pisgah 220 kV transmission lines would result in a less-than-significant impact/no adverse effect to historic properties.

3.0 SUMMARY

Four cultural resources (three archeological sites and one historic site) were identified within the APE of the Calcite Substation and Ord Mountain Projects, which have the potential to be impacted by construction of the projects. Archaeological site SBR-2145 was resurveyed and determined to not be extant at the mapped location. Site P-36-29901 was separately evaluated and found to be not significant. Site P-36-29900 was avoided by redesign of the gen-tie alignment. As a result of these efforts, potential impacts to these three sites would be less than significant under CEQA.

A qualified architectural historian who meets the Secretary of the Interiors Professional Qualifications Standards for Architectural History reviewed the proposed project description for

potential impacts to historical resources under CEQA and historic properties under Section 106 of the NHPA. As a result of the impacts assessment, Dudek finds that the proposed project would result in a less than significant impact/no adverse effect to the NRHP-eligible SCE Lugo-Pisgah No. 1, a contributing element of the larger SCE First (No. 1), Second (No. 2), and Third (No. 3) Boulder Transmission Lines (P-36-014876/ CA-SBR-13115H). No additional treatment or mitigation is required.

Sincerely,

Brad Comeau, MSc, RPA
Senior Archaeologist

Samantha Murray, MA
Senior Architectural Historian

cc: Matthew Valerio, David Hochart; Dudek

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